

REMARKS

Entry of the foregoing, reexamination and reconsideration of the subject application are respectfully requested in light of the amendments above and the comments which follow.

As correctly noted in the Office Action Summary, claims 15-17, 19-22 and 28-35 were pending. By the present response, claims 15, 17 and 29 have been amended, claim 16 has been canceled, and claims 34-35 have been withdrawn by the Examiner. Thus, upon entry of the present response, claims 15, 17, 19-22 and 28-33 are pending and await further consideration on the merits.

Support for the foregoing amendments can be found, for example, in at least the following locations in the original disclosure: page 3, lines 1-3; page 4, lines 10-12; page 7, line 23; and the original claims.

ELECTION/RESTRICTION

It is asserted in paragraph 2 of the Official Action that claims 34 and 35 are patently distinct from the earlier presented claims due to the presence of an "intermediate-final product relationship." This assertion is respectfully traversed. Claims 34 and 35, as well as those claims from which they depend, are process claims, not product claims. Thus, their characterization as being drawn to intermediate/final products is clearly incorrect. In addition, in order to support a restriction requirement between two or more related process inventions it must be established that "the inventions *as claimed* do not overlap in scope, i.e., are mutually exclusive" (MPEP 806.05(j)). Claims 34 and 35 depend from claim 28. Claim 28 is very similar in scope to claim 1. Thus, there is clear overlap between the subject

matter set forth in claims 34 and 35 and that subject matter which has already been examined.

Since claims 34 and 35, as well as the claims from which they depend, are all directed to a process for manufacture, applicant is entitled to rejoinder of claims 34 and 35 upon the allowance of claim 28.

CLAIM REJECTIONS UNDER 35 U.S.C. §§102/103

Claims 15-17 and 19-22 stand rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 5,321,186 to Honda et al. (hereafter "*Honda et al.*") on the grounds set forth in paragraph 2 of the Official Action dated December 1, 2006. For at least the reasons noted below, this rejection should be withdrawn.

The present invention is directed to a process for the dry impregnation of a mineral oxide by orthophosphoric or polyphosphoric acid. A process performed according to the principles of the present invention provides the advantage of making it possible to obtain a material that is particularly useful as a fire retardant while advantageously and simultaneously limiting the manufacturing cost of the material (see, e.g., page 2, lines 9-21 of the present specification).

A process performed according to the principles of the present invention is set forth in claim 15. Claim 15 recites:

15. A process for the dry impregnation of a highly porous mineral oxide which is silica, alumina, silica-alumina, zirconia or titanium oxide having a pore volume of at least 1 ml/g, comprising the steps of:

a) impregnating said oxide with a sufficient amount of concentrated orthophosphoric or polyphosphoric acid, said impregnation being performed in a dry mode whereby said acid is added to said oxide,

b) drying said oxide at atmospheric pressure at a temperature of between 100 and 200°C for at least 3 hours, and,

c) calcining said oxide at atmospheric pressure at a temperature of between 200°C and 500°C for at least 2 hours.

As apparent from the above, claim 15 is directed to a process for the "dry impregnation of a mineral oxide," and "said impregnation being performed in a dry mode whereby said acid is added to said oxide." By contrast, *Honda et al.* fails to disclose, or even suggest, the dry impregnation of one of the above-mentioned mineral oxides. The only reference to the above-identified mineral oxides contained in the entire *Honda et al.* disclosure appears at lines 57-60 of column 3:

Moreover, the catalyst can be used in the state supported by a carrier such as silica, alumina, silicon carbide, aluminum nitride, titania or zirconia as has been commonly adopted in this art.

However, nowhere does *Honda et al.* disclose, or even suggest, the dry impregnation of any of these mineral oxide carriers with any substance whatsoever. Thus, the grounds for rejection fail to establish a *prima facie* case of anticipation or obviousness.

Claim 15 additionally requires a step of "drying said oxide." The oxide referred to is one of the above-identified mineral oxides. The grounds for rejection allege that *Honda et al.* discloses this drying step. This assertion is respectfully traversed. The *Honda et al.* disclosure sets forth an example, whereby a solution is prepared containing indium nitride and triammonium phosphate to form precipitates, which are subsequently decanted, filtered, dried and calcined:

354.9 g of indium nitrate (available from Mitsuwa Chemical and Pharmaceutical Co., Ltd.) was added to and dissolved in 3,000 ml of water heated to 40°C. and then a solution of 203.1 g of triammonium phosphate (available from Kanto Chemical Co., Ltd.) in 1,000 ml of water was added to the

resulting solution to thus form precipitates. The precipitates were decanted and then filtered under suction. The resulting filter cake was dried at 120°C. for 5 hours and further calcined at 500°C. for 4 hours. The calcined filter cake was pulverized into fine particles of 10 to 32 mesh and was used as a catalyst. (column 4, lines 40-51)

As readily apparent from the above, it is clear that the above-quoted portion of the *Honda et al.* disclosure fails to teach any form of drying procedure whatsoever involving an impregnated mineral oxide of silica, alumina, silica-alumina, zirconia or titanium. Thus, *Honda et al.* also fails to disclose, or even suggest, this additional aspect of the process of claim 15.

Claim 15 additionally requires a step of "calcining said oxide." Again, the oxide which is calcined is a mineral oxide of silica, alumina, silica-alumina, zirconia or titanium. It is alleged in the grounds for rejection that this calcining step is disclosed by *Honda et al.* at lines 48-51 of column 4. However, as readily apparent from this portion of the *Honda et al.* disclosure, which is repeated above, nowhere does *Honda et al.* disclose, or even suggest, any form of calcining of an impregnated mineral oxide of silica, alumina, silica-alumina, zirconia or titanium. Thus, *Honda et al.* also fails to disclose, or even suggest, this further aspect of the process of claim 15.

As evident from the above, claim 1 additionally requires the impregnated of a highly porous mineral oxide "having a pore volume of at least 1 ml/g." However, as admitted in paragraph 11 of the Official Action, "the art is silent as to the pore volume claimed." Since the basis for the rejection admittedly rests upon principles of inherency, the elevated burden of establishing the presence of claim features about which the asserted prior art is silent must be observed. Namely, the Federal Circuit has repeatedly stated that in order to establish the inherency of a missing element it

must be shown that the missing element must necessarily be present in the reference, and would be recognized as such by those persons of ordinary skill in the art. *Continental Can Co. U.S.A. v. Monsanto Co.*, 948 F.2d 1264, 20 USPQ2d 1746, 1749-50 (Fed. Cir. 1991); *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981) ("inherency however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient"); *Standard Oil Co. v. Montedison, S.p.A.*, 664 F.2d 356, 372, 212 USPQ 327, 341 (3rd Cir. 1981) (for a claim to be inherent in the prior art it is "not sufficient that a person following a disclosure sometimes obtained the result set in the [claim]; it must invariably happen"). The burden is on the Examiner to establish the inherent presence of the missing feature, not on the applicant to prove a negative, as alleged in paragraph 11 of the Official Action ("Applicants have failed to show or alleged that the pore volume of the prior art is outside the range as claimed").

As would be readily understandable to one of ordinary skill in the art, chemical composition and morphology (e.g., porosity) are separate properties. It does not necessarily follow that similarity in chemical composition will yield the same morphology. Thus, amended claim 15 is distinguishable over *Honda et al.* for at least this additional reason.

Thus, for at least the reasons explained above, the rejection is improper and should be withdrawn.

Claims 17 and 19-22 depend either directly or indirectly upon claim 15. Thus, these claims are also novel and non-obvious over the disclosure of *Honda et al.* for at least the same reasons noted above.

The only statement of the grounds for rejection of the claims of the present application appears in paragraph 5 of the Official Action: "The rejection under 35 USC 103 set forth in the paper mailed 12/1/06 is deemed proper and is herein repeated." Applicants note that claims 28-35 were not rejected in the paper mailed 12/1/06. Thus, an indication of the allowability of these claims is respectfully requested in any future Patent Office correspondence.

CONCLUSION

From the foregoing, further and favorable action in the form of a Notice of Allowance is earnestly solicited. Should the Examiner feel that any issues remain, it is requested that the undersigned be contacted so that any such issues may be adequately addressed and prosecution of the instant application expedited.

Respectfully submitted,

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